ABSTRACT

An adaptive filter suitable for fabrication on an RF integrated circuit and used for transmit (TX) leakage rejection in a wireless full-duplex communication system is described. The adaptive filter includes a summer and an adaptive estimator. The summer receives an input signal having a TX leakage signal and an estimator signal having an estimate of the TX leakage signal, subtracts the estimator signal from the input signal, and provides an output signal having the TX leakage signal attenuated. The adaptive estimator receives the output signal and a reference signal having a version of the transmit signal, estimates the TX leakage signal in the input signal based on the output signal and the reference signal, and provides the estimator signal. The adaptive estimator may utilize an LMS algorithm to minimize a mean square error between the TX leakage signal in the input signal and the TX leakage signal estimate in the estimator signal.